For the heap operations, both buildMaxHeap and buildMinHeap have the same time complexity of O(n) , n being the size of the data being inserted into the heap array. This complexity is O(n\*log(n)) because upheap takes log(n) and we upheap n times since we insert n elements.

For getting the maximum 10 and minimum 10 we achieve this by removing 10 nodes from the maxheap and 10 nodes from the minheap which results in the us using downheap 20 times, so the complexity is O(20\*log(n)) which is O(log(n)). Generally speaking, for any K maximum or minimum the complexity is O(k\*log(n)).

The contigious period function iterates through the loop once so it has a complexity of O(n).

Thus the total complexity of our program is O(n+n\*log(n)). And since we use the same array for all operations the space complexity is O(n).